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**A process evaluation of a Psychomotor Dance Therapy Intervention (DANCIN) for behaviour change in Dementia: attitudes and beliefs of participating residents and staff**

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## **Abstract**

In a previous paper we presented results from a 12-week study of a Psychomotor DANCe Therapy INtervention (DANCIN) based on Danzón Latin Ballroom that involves Motor, Emotional-Affective and Cognitive domains; using a Multiple-Baseline Single-Case design in three care homes. This paper reports the results of a complementary process evaluation to elicit the attitudes and beliefs of care home staff, participating residents and family members with the aim of refining the content of DANCIN in dementia care.

## **Methods**

An external researcher collected bespoke questionnaires from 10 participating residents, 32 care home staff, and three participants' family members who provided impromptu feedback in one of the care homes. The Behaviour Change Technique Taxonomy v1 (BCTTv1) provided a methodological tool for identifying active components of the DANCIN approach warranting further exploration, development and implementation.

## **Results**

Ten residents found DANCIN beneficial in terms of mood and socialization in the care home. Overall, 78% of the staff thought DANCIN led to improvements in residents' mood; 75% agreed that there were improvements in behaviour; 56% reported increased job satisfaction; 78% of staff were enthusiastic about receiving further training. Based on participants' responses, four BCTTv1 labels – Social Support (Emotional), Focus on Past Success and Verbal Persuasion to boost Self-efficacy, Restructuring the Social Environment and Habit Formation – were identified to describe the intervention. Residents and Staff recommended including additional musical genres and extending the session length. Discussions of implementing a supervision system to sustain DANCIN regularly regardless of management or staff turnover were suggested.

## Conclusions

Care home residents with mild to moderate dementia wanted to continue DANCIN as part of their routine care and staff and family members were largely supportive of this approach. This study argues in favour of further dissemination of DANCIN in care homes. We provide recommendations for the future development of DANCIN based on the views of key stakeholder groups.

**Key words:** dancing; dementia; staff training; long-term care; behaviour change; psychomotor therapy; psychosocial; public involvement; process evaluation

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## Introduction

Dementia with its associated social and economic factors is a growing problem worldwide (Prince *et al.*, 2015). There are over 386,000 people with dementia living in care homes in England and 38,000 in Scotland (ENRICH, 2015). Banerjee (2009) recommended training staff to provide better care for people with dementia presenting with behavioural and psychological symptoms rather than antipsychotic medication. However, low numbers of care staff and poor organisational systems in care homes hamper the implementation of systematic guidelines in routine practice. In psychosocial interventions studies, researchers include staff training to facilitate these interventions in care settings (Goyder *et al.*, 2012; Teri *et al.*, 2009; Fossey and James, 2008). These studies have shown improvements in residents' quality of life, as well as reductions in problematic behaviour. However, we need staff and residents to provide feedback and recommendations to develop and implement programmes in care homes. Robinson *et al.*, 2010 suggest that researchers and clinicians should involve the public to develop health care research which can identify potential barriers and facilitators to the successful implementation of interventions.

The data presented in this paper was collected as part of a series of previously published investigations of Psychomotor DANCe Therapy INtervention (DANCIN) in care homes. Based on the Medical Research Council (MRC) guidelines for developing complex interventions (Craig et al, 2008) this programme of work consisted of a systematic review of dancing as a psychosocial intervention in dementia care settings (Guzmán-García et al., 2012a); a Grounded Theory pilot study (Guzmán-García et al., 2012b); and a Multiple-Baseline Single-Case study looking at the individual effect of DANCIN on behaviour and mood variables in ten residents with mild to moderate levels of dementia (Guzmán et al., 2016).

The aim of this study was to conduct a process evaluation to understand the attitudes and beliefs of participants towards DANCIN, and how to improve the approach in dementia care settings. It provides evidence concerning whether training staff in the use of this dancing therapy approach might be possible in order to conduct a larger scale study. It is crucial to develop strategies that not only focus on training staff, but on measures to safeguard the sustainability of interventions too (Boersma *et al.*, 2015).

## **Methods**

The study was approved by the Research and Development Department, Newcastle, Tyne and Wear National Health Service (NHS) Trust, and with the Integrated Research Application System (IRAS) Ethics Committee [Reference Number 09/H090674] in Newcastle upon Tyne, England, United Kingdom. A necessary amendment was notified and approved (24642/108056/1/483) on account of some dancers becoming observers because of health deterioration not attributable to DANCIN.

## **Intervention**

The DANCIN model under evaluation was designed and based on the Psychomotor Therapy model which has been reported in detail in previous publications (Guzmán-García et al., 2012b; Guzmán et al., 2016). In summary, Psychomotor Therapy involves three domains: i) Motor (balance, fast/slow interpersonal coordination, hand-grip, gesture and facial expression); ii) Emotional-Affective (feeling expression, verbal and non-verbal communication); and iii) Cognitive (planning movement in space), with the aim of using movement activities and paying attention to bodily experiences (Wallon, 1932; Dröes, 1997; Calmels, 2003; Probst et al., 2010). The approach is complemented by hand by hand touch, relaxation and breathing techniques (Camacho and Paolillo, 2004). Additionally, arm-chair exercises to warm-up and cool down, and four simplified Danzón Latin Ballroom choreographies were practised for staff to perform with residents at each week of the study.

### ***Delivery***

DANCIN sessions were arranged twice-weekly for 30 minutes between 14:00 to 15:30 pm with the aim to deliver a total of 24 sessions in each care home. The intervention was led by the first author (Clinical Psychologist with background in Psychomotor Therapy) with staff invited to participate as facilitators. DANCIN staff training was delivered for a small group of 3-5 staff members, including activity coordinators at each setting in a two-hour session. Staff willing to facilitate the session did not require professional dance experience, but a rhythmic response to music was required. DANCIN staff training involved using a theoretical and practical presentation, comprising eight units: 1) the Psychomotor Therapy principles; 2) information on the effects of dancing in dementia based on the findings of the systematic review (Guzmán-García et al., 2012a); 3) effect of antipsychotic medication on dementia; 4) music and rhythmicity; 5) DANCIN session structure; 6) safety considerations whilst dancing; 7) performing techniques and movement adaptations and 8) modelling how to feedback the emotions and feelings with participants after each session. During the session, staff asked residents with previous dancing experience to help and lead at certain points of the songs. After each DANCIN session, staff were encouraged to sit down and ask residents to share



thoughts after taking part in DANCIN. For example, people's reactions and opinions, verbal and non-verbal, were discussed within the dance group. Experiences from residents and staff are acknowledged and validated by the dance group, including the observers who were taking part by chair-based adaptation moves.

### **Data collection and Instruments**

The questionnaires were informed by questions used in semi-structured interviews in a previous qualitative grounded theory study of DANCIN (Guzmán-García *et al.*, 2012b); recommendations for developing questionnaires (Oppenheim, 1992); and a questionnaire used with staff caring for older people with dementia (Palo-Bengtsson and Ekman, 1997).

To simplify the process for participants with dementia and to facilitate a higher response rate, the scaling of the residents' questionnaire consisted of simple yes/no responses. The questionnaires for care home staff consisted of Likert-type scaling responses, such as worse, slightly worse, no change, slightly better, a lot better.

Frequency was once, twice a week, or daily. Residents' questions comprised areas evaluating views and beliefs on the overall experience, impact on mood, behaviour, health, and social environment. Staff questionnaires addressed job satisfaction, confidence in approaching residents, transferable skills, effects on the social environment, mood, behaviour and reducing medication in participants. Residents and staff questionnaires provided open space for additional comments and recommendations concerning the DANCIN sessions or any other issue not addressed in the questionnaire. Verbatim comments given by residents were noted down by the external researcher, and written comments by staff were collected for analysis.

See Table 1. For questionnaires examples.

**-Insert Table 1 here-**

Following the 12-week DANCIN intervention, an external researcher (second author: physiotherapist and public involvement in research specialist) administered questionnaires to residents and available staff in each of the three care homes to obtain feedback. The questionnaires were returned in a sealed envelope. Emphasis on independent status, confidential and anonymity management of data was given. Residents were permitted to receive assistance in reading the questions from the external researcher. Photos of DANCIN sessions captured by each care home were shown to residents as a mnemonic aid for participation in the evaluation. The external researcher collected notes of comments given by the residents and ticked the responses accordingly.

### **Sampling and Recruitment**

A total of 10 residents (six women, four men) were enrolled in the study as dancers. Five were from Home-1 (residential); four from Home-2 (residential) and one from Home-3 (nursing). As Homes 2 and 3 were interlinked, five residents joined together in the nursing home. Thirty-two staff members across the three care homes (22 female; 10 male) took part in this study: four danced and scored the monitoring behaviour/mood diaries during the Multiple-Baseline Single-Case study (for previous study details, see Guzmán et al., 2016). Ten observed and scored monitoring behaviour/mood diaries; 13 only danced; five only observed. Participants' demographic information is summarised in Table 2.

**- Insert Table 2 here please -**

### **Data Analysis**

There is a call for rigorous methods to address the active content of interventions with precision and specificity (Des Jarlais et al., 2004). Hence, we applied the Behaviour Change Techniques Taxonomy Version 1 (BCTTv1) to inform the process evaluation in this study for future implementation of DANCIN in care homes. BCTTv1 provides a method to specify, interpret and implement the 'active ingredients' of interventions to change behaviours. It is a

structured taxonomy of 93 distinct BCTs with labels, definitions and examples. (Michie *et al.*, 2013).

Questionnaire responses, written and verbatim comments were mapped to the BCTTv1. The selected labels were influenced by the Scottish Intercollegiate Guidelines Network, Information for Patients, Carers and Members of the Public (SIGN, 2011). This is a Scottish Health Improvement document that helps to identify concerns and develop guidelines for treatment and care of patients. Individual scores for each question were entered onto an Excel Spreadsheet. A percentage of scores was derived from each care home and used for the total response to each item.

## **Results**

The external researcher collected questionnaires from ten residents located as follows: Home-1 (n=5); Home-2 (n=4) and Home-3 (n=1). A total of 32 questionnaires from staff members were collected; 27 had an active role during the Multiple-Baseline Single-Case study, for example by completing the monitoring diaries of behaviour and mood outcomes. Three family members from participating residents (Home-1) wanted to provide feedback and returned questionnaires to external researcher. No relatives at Homes 2 and 3 were available on the day that the researcher conducted the evaluation.

Relatives rated the residents' mood, behaviour and social environment as 'a lot better' during the DANCIN study. These family members were reluctant to see a reduction in sedative medication. Two relatives rated DANCIN as appropriate for all stages of dementia. One relative stated that it would be moderately difficult for people with severe dementia. Family members evaluated the DANCIN model as easy to facilitate by staff and supported the idea of including dance sessions since some of the residents were regular dancers in their youth.

## **Labels associated with Behaviour Change**

Data will be integrated below under four BCTTv1 headings. The analysis will focus on residents first and staff responses second.

### **1) Social Support (Emotional)**

#### **Residents**

Ten residents provided feedback and liked DANCIN sessions. One resident, who only attended 50% of the sessions, showed some frustration owing to breathing difficulties and commented that despite not being able to dance and, therefore, only observe, he would recommend DANCIN to other residents. Residents felt that the sessions brought a positive effect to their mood, behaviour and social interaction with other residents and staff. Four residents did not recall that the intervention study aimed to change problematic behaviours (e.g. insomnia). Verbatim responses from residents were as follows:

‘Yes, remember heel, toe, kick, breathing in/out and wiggle fingers, always enjoyed dancing’

‘Got easier each week, cool down was relaxing’

‘Pleased it (DANCIN) was something I could take part in despite my poor eyesight’

‘Couldn’t say, don’t feel my behaviour a problem. Would get thrown out if it was’

‘[...] teaches you how to be sociable or nice to people, makes you more confident’

‘Improves your attitude towards life, lifting up depression’.

#### **Staff**

There were mixed responses with regards to mood in the context of social and emotional support, with 78% of staff thinking that residents’ mood improved and 22% thinking there was no change. Similarly, 75% of staff provided a positive answer about the effect on

behaviour and 25% stated that residents' problematic behaviour had not changed.

Comments included:

'Residents much calmer, like with (resident's name), who was less agitated on dancing days;  
the residents were a lot more relaxed'

'During (DANCIN) study, residents seem to be in a better mood'

Concerning staff thoughts about whether DANCIN was socially supportive for residents, 84% staff responded that it was easy to follow for people with mild to moderate dementia and 16% thought it was not easy for residents. Staff suggested having DANCIN session extended to 45 minutes and adding other musical genres like music from 1940s to 1970s.

Some further comments were noted by staff:

'Residents with differing degrees of dementia all loved to take part or sit and  
watch the dancing'

'Everything was well-structured and the residents were shaped to the session  
without any problem'

'Most definitely, Danzón and adding other type of music in Free Style'

One staff member highlighted the good effects for a particular resident who was not a participant of this study, but who interacted in the DANCIN sessions:

'A lady with severe dementia really enjoyed it and did sleep all night once we  
introduced the dancing in the care home. She doesn't talk anymore, but now  
she likes to say 'Thank you' or 'I'm grateful', she smiles and definitely sleeps  
better'

## **2) Focus on Past Success and Verbal Persuasion to boost Self-efficacy**

### **Residents**

Participants' previous dancing experience varied from 'none', 'occasional' to 'regular'. The external researcher noted that participants reminisced about dancing in the past and that DANCIN boosted their strengths rather than deficits. Residents' verbatim comments were reported:

'I never thought of that, I think is good for my health, I liked to watch it'

'I didn't know we could do things like this (DANCIN) here'

'Not difficult, once you got into it. Helped by rhythm of music'

## **Staff**

Overall, 44% of staff thought that job satisfaction had not changed, while 56% recorded better job satisfaction during the DANCIN programme. Noted comments by staff:

'It feels good to see residents happier after taking part'

'Not much change, however it was nice to see residents enjoying themselves; it was also nice to see staff enjoying themselves'

Concerning whether the DANCIN sessions contributed to feelings of greater confidence (self-efficacy) in the context with dealing with residents in a physical manner (e.g. personal hygiene), 72% care staff reported no change and 28% said they had much better confidence.

'It gives benefit to residents, to do arm movements and breathing exercises in the morning'

'I am able to carry on the dance sessions'

## **3) Restructuring the Social Environment**

### **Residents**

All ten residents said it was a positive 'social' activity. Noted comments read as follows:

'Yes, encourages residents to come together'

'Everybody enjoyed it. Though it reflected well on care home, as everyone joined'

### **Staff**

We found that 66% of staff believed that the social environment noticeably improved during and following DANCIN, whilst 34% said that the social environment had not changed.

'Mr S increased his energy level, in some ways after dancing sessions, residents were happier'

'It was good for the residents to keep active in any way possible and it does get them together and interacting'

There were mixed responses about whether DANCIN would be sustainable as a matter of day-to-day practice within the social environment: 34% staff did not believe it, 66% reported

that DANCIN strategies (e.g. having a little dance in the corridor to reduce anxiety) could be used in a transferable manner whilst working with residents.

Staff comments written down were:

‘I could see dancing for newer staff, for getting involved [...] to know their clients more’

‘Residents were able to follow with the help of staff’

It is important to mention that some staff mentioned some factors that hindered staff from joining DANCIN. Such as: completing care home's paper work or covering for absent staff, feelings of embarrassment, being unwell themselves or lacking time for these activities with residents.

#### **4) Habit Formation**

##### **Residents**

In terms of frequency to implement DANCIN on regular basis, all residents wanted to dance as part of their care plan. No further recommendations were given on preferred time or duration for DANCIN sessions. Verbatim and written comments by participants stated:

‘Twice a week is fine, I would be happy to dance seven days a week! I enjoyed it 100%’

‘Dance every day! And add other music’

##### **Staff**

In terms of preferred frequency of sessions, 78% staff mentioned twice a week, 19% staff responded daily, and 3% respondents left the question blank. As for DANCIN being introduced as a regular part of the residents' care plans, 86% of staff thought it would be quite possible, 13% said that it would be complicated and 1% said it was not feasible at all. Written comments were as follow:

‘I was impressed with the dancing sessions in the home, but there is often a problem of how often it could be arranged’

‘For people that enjoy the activity, watching or taking part it is a good way to keep active’

Staff beliefs on receiving training to sustain DANCIN in the care homes were generally positive: 78% indicated ‘quite a lot of interest’, 22% were ‘not enthusiastic’ about further training. The questionnaire asked an open question about whose responsibility it would be to organise the sessions in the future and about the frequency of DANCIN sessions if they were to continue: 16% responses were blank, and 47% of staff mentioned the activity coordinator as the person to organise the DANCIN sessions, whilst 25% suggested the manager and 12% said the activity coordinator helped by a senior carer or family member.

‘Once a day by activities coordinator with the help of a member of the staff or family member’

‘The residents have learnt a routine for the dancing, routine is important’

Concerning staff attitudes about whether the approach was a potential method for helping to reduce antipsychotic medication to treat behaviour and mood disturbance, we found that 44% of staff were against reducing medication and 41% of staff were in favour of reducing intake, while 15% of staff did not know what medication the residents were on:

‘I don’t really know if the residents taking part are on those medications’

‘Sometimes if they (residents) attended the dancing affected their mood, more positive [...] they were able to sleep better because they (residents) were tired, so yes’

## Discussion

This study reported the attitudes and beliefs of residents, staff and relatives of a Psychomotor DANCe Therapy Intervention (DANCIN). In keeping with our earlier research (Guzmán-García *et al.*, 2012b), the majority of staff found the model to have beneficial effects on the social environment, mood and behaviour of participants with dementia. There were a number of ‘softer’ positive benefits from the intervention. For instance, the DANCIN sessions were a useful way to generate good conversations amongst visitors to the homes. For family members, DANCIN was redolent of the ballroom dancing their parents once enjoyed. New staff were helped to develop the confidence required to approach residents in



a more physical way, for example to provide assistance around personal hygiene. Performing DANCIN with residents allowed social touch and reduced isolation and was appreciated by staff as a dance programme which was easy to facilitate. Minor modifications of the sessions have been suggested (see Social Support (Emotional) and Habit Formation labels).

Our findings suggest that staff, usually a senior member of the care team and the activity coordinator, require support from management to continue DANCIN sessions as part of their working shifts. This is relevant to current English and Scottish National Dementia Strategies around staff training programmes, as activity coordinators are usually volunteers not formally included on the Dementia Workforce Development Plan. Staff require extrinsic motivators to support them if they are to pursue DANCIN. Participants' responses in this study suggest it is important to extend the content of staff training on side-effects of antipsychotic medication. Understanding how psychosocial interventions like DANCIN can improve behaviour and mood may obviate the need for antipsychotic medication.

In our previous study (Guzmán-García *et al.*, 2012b), staff shortages and high workload were mentioned as possible obstacles to long-term adherence. In the present study, staff were prepared to allocate time for DANCIN because of its perceived benefits for the residents. Worries seen in our previous study regarding the fear of becoming emotionally attached to residents through DANCIN were not mentioned in this process evaluation study. Beliefs were mixed amongst the staff concerning whether or not the intervention was suitable for all stages of dementia. Some staff had more involvement in the DANCIN programme than others, either as participants or as observers, which is likely to have affected their appreciation of the possible benefits of this study. Participants' views on DANCIN were similar to previous studies using dance in dementia care. Palo-Bengtsson *et al.* (1998) found that staff could see the therapeutic benefits, whilst also being aware of the extra work created for them. Other studies have also demonstrated the positive attitudes

created by dance interventions when participants dancing skills are displayed (Palo-Bengtsson and Ekman, 1997; Coaten, 2001; Duignan *et al.*, 2009; Ravelin *et al.*, 2013).

### **Strengths and limitations**

Whilst this study represents attitudes from within care homes and contributes to the field of psychosocial interventions in dementia, it was only conducted in a small region of North East England. We ensured that questionnaires for residents with mild or moderate dementia were easy to understand. We are aware that staff sometimes helped residents to respond to the questionnaire, so there might be some bias in their responses. Staff were aware of subsequent deteriorations in the health of some of their residents (not attributable to the study), which may then have coloured their judgements about the possible benefits of DANCIN. Using the external researcher to gather the current data is a strength of the study. Although it was not always clear how much involvement the staff interviewed had with the intervention, respondents nevertheless knew about the study in the care home.

### **Methodological Challenges and Organisation Culture**

Home-1(residential) and Home-3 (nursing) intended to keep DANCIN regardless of staff shortages. In contrast, staff at Home-2 (residential) did not wish to continue and were reluctant to fill in the process evaluation questionnaires. This attitude was caused by time pressures owing to staff shortage and manager turnover. The differences in motivation are likely to have a strong impact on results. Before starting this sort of research, it is also important to establish with all staff, including managers, that the DANCIN activity is not only for entertainment, and to emphasize the therapeutic objectives, which in this evaluation were found to be decreases in anxiety and boosting of self-efficacy in both residents and staff, as well as creating a positive social environment. Behaviour change research suggest that habit-formation activities are needed to sustain behaviour (Lally and Gardner, 2013). Our findings suggest that the sustainability of this intervention depends on team work with activity coordinators, nurses and care assistants working together.

It was useful to have designated key senior staff members to organise the DANCIN sessions. During our research, Home-2 and Home-3 were going through management turnovers, which was a challenge for the operation of the study. To ensure research rigour, staff required monthly external supervision so that the DANCIN model was consistently delivered. Previous research has shown that training staff has failed in the longer term (Moniz-Cook, 1998; Shah and De, 1998), suggesting that models for better supervision in the form of an 'interactive staff training approach' are required (Gentry *et al.*, 2001). Strategies on how to provide feedback (Milne *et al.*, 2002; James *et al.*, 2007) can be adapted and organised in the context of staff training whilst facilitating DANCIN.

### **Conclusion and Clinical Implications for Dementia Care**

Our approach to DANCIN is following the MRC model to inform complex interventions (Craig *et al.*, 2008). This process evaluation extends the findings from previously published investigations of DANCIN in care homes, by reporting the views and experiences of key stakeholder groups.

Residents and staff have helped improve the content of this intervention and emphasized the positive effects on behaviour, mood and social environment. Residents with mild to moderate dementia are keen to receive this intervention as part of their routine care, and it would appear that care home staff are happy to receive additional training to support such approaches. We have shown that family members who provided feedback supported the idea of including DANCIN in their relatives' care plans.

A future phase II feasibility study is warranted. However, successful implementation of DANCIN would require strong leadership from a dedicated therapist trained in Psychomotor Dance Therapy, together with a systematic supervision plan to foster effective team working between care home staff as part of their normal shift working patterns. Four labels of the BCTTv1 (Social Support (Emotional); Focus on Past Success and Verbal Persuasion to

boost Self-efficacy; Restructuring the Social Environment; Habit Formation) are worthy of further exploration within the context of future experimental studies to promote long-term ongoing active participation in Psychomotor Dance Therapy. A preliminary manual has subsequently been produced with some modification of the content of the sessions (available from first author).

### **Conflict of interest declaration**

None.

### **Description of author's roles**

This study was undertaken by Dr Azucena Guzmán in partial fulfilment of the requirements for her PhD. Dr Lisa Robinson collected research data and provided input to the paper; Professor Ian James, Professor Lynn Rochester and Professor Julian Hughes provided expert advice and supervision on the research, practical support with delivering and training on the Psychomotor Dance Therapy Intervention and commented on drafts of the paper, including the final draft.

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